DOCUMENT RESUME

ED 187 818 UD 020 630

AUTHOR Laffey, James M.
TITLE The Assessment of Involvement with School Work Among Urban High School Students.
PUB DATE Apr 80
NOTE 30p.; Paper presented at the Annual Meeting of the American Educational Research Association (Boston, MA, April 7-11, 1980).

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Behavioral Science Research; Expectation; Goal Orientation; High Schools; Interviews; Measurement Techniques; *Motivation; Observation; *Participant Characteristics; *Participant Satisfaction; *Persistence; Self Esteem; *Student Participation; *Success; Urban Schools

ABSTRACT

This paper reports on a study of the involvement of high school students with instructional activities. It was hypothesized that student involvement depends on expectations for success, importance of the action to the achievement of success, and confidence that the action is appropriate for the achievement of success. Eighty-eight students enrolled in four urban secondary school social studies classes formed the study sample. Data collection techniques were systematic observation of on-task classroom behavior, student self-reports on perceptions and feelings cued by a random signal, examination of school and class records, and interviews with selected students. The results of the investigation are discussed including descriptions of regularities in student actions and testing hypotheses about how these actions are conceived, formulated, and executed in classrooms. Findings indicate a degree of regularity in student actions when successfully involved in tasks. Implications for understanding classroom motivation and for using a new technique for assessing classroom involvement are presented. (MK)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

MAY 1 6 1980

ED187818

THE ASSESSMENT OF INVOLVEMENT WITH SCHOOL WORK AMONG URBAN HIGH SCHOOL STUDENTS

James M. Laffey

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

James F. Laffey

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Paper presented at the Annual Meeting of the American Educational Research Association in Boston, April 7-11, 1980

UD020630

In 1963 John Carroll proposed a model of school learning in which "time spent" and "perseverance" were important antecedents of scholastic achievement. Bloom (1968 and 1976), Rosenshine (1971 and 1976), Brophy (1974), Marliave (1978), and others have supported this model with research findings, findings which demonstrate positive, albeit generally modest, relationships between indices of involvement with school work and school achievement. Carroll's proposition articulates a general belief of educators: Students achieve when they pay attention, concentrate, work hard, and spend time doing school work. Indeed few educational benefits are possible unless instructional activities can elicit and maintain involvement.

A belief in the importance of student involvement has led, naturally enough, to efforts to increase involvement. These attempts by teachers are as varied as the hickory switch and "laissez faire," both of which, to an extent, do and do not work. We do not sufficiently understand involvement to know why seemingly incompatible methods may have the same effect. Thus, questions about why some students participate and others do not, or why some students participate at times but not at other times are unresolved. The analysis and understanding of involvement has proven a precipitous challenge, a challenge to be met by increasing our knowledge about the nature, explanation, and consequences of student involvement in the classroom.

An explanation of involvement can be derived from cognitive theories of motivation. Cognitively oriented psychologists, such as Lewin and Tolman, posit that behavior is purposive and determined by the totality of forces acting on a person at any given time. The choice of one behavior instead of an alternative behavior can only be explained when we understand the comparative expectancies and valences, the expectation that a behavior will result in a valued goal and the valence of that goal.

Studies of mechanisms of selection or choice show that different circumstances may evoke different relationships among expectancies, valences, and involvement. Laboratory experiments by Dember (1956 and 1965) led to a theory choice, which asserts that objects or events have a complexity value, and that individuals have an ideal level of complexity that they are equipped to deal with comfortably and effectively. Dember postulates that individuals are most involved with stimuli just a little more complex than the ideal. Results of experiments with rats (Dember, Earl, and Paradise, 1957) and humans (Kammann, 1964) support this principle of a "pacer" stimulus.

Csikszentmihalyi (1975) also developed propositions to explain involvement, calling these propositions a theory of flow. The theory of flow describes variables in the natural setting which influence choice and suggests that enjoyment may be a crucial determinant of involvement. True enjoyment--analogous to peak experiences felt by creative people at work, athletes in competition, or rock climbers reaching a mountain crest--results from a balance between an individual's assessments of challenges and skills for an event. Mayers (1978) and Mayers, Csikszentmihalyi, and Larson (1978) investigated the relationship between "flow" experiences and high school students' performances. The data showed positive relationships of skills with enjoyment and motivation, but did not show the expected relationships for challenges. Students enjoyed and were most active in classes with reduced challenges.

Dember, Csikszentmihalyi, and Mayers all recognize the dependence of involvement upon the relationship between task difficulty and skills. Investigators have shown that challenges slightly above skills (pacers),

challenges balanced with skills (flow state), and challenges less than skills (reduced challenges) can lead to involvement with events. The framework for the present study associates the amount and intensity of attention, concern, and effort with the individual's expectations for success and incentives in a situation. This framework is explicated by the following propositions:

1. Each student brings to the classroom unique aptitudes and orienting characteristics; sets of expectations, attitudes, aspirations, and tendencies to respond to incentives.

2. Classroom situations are assessed by the student. These assessments include appraisals of personal skillfulness and appraisals of how difficult are the tasks.

3. The student assessments (constructions) are influenced by combinations of aptitudes, orienting characteristics, and the context of the situation.

4. Reports by the student about these constructions reflect the student's understanding of his/her interaction with the environment.

5. A student who believes that instructional activities will bring important rewards will invest time and energy in those activities.

6. The commitment of the student depends on the student's confidence that the action is the most promising means for achieving success.

Figure 1 portrays the concepts and relationships among the concepts which are referenced in these propositions. Figure 1A substitutes the measurable variables used to indicate the concepts of Figure 1. The main hypothesis of this research is:

> Student involvement depends on expectations for success, importance of the action to the achievement of success, and confidence that the action is appropriate for the achievement of success.

Two auxiliary hypothesis are also tested:

1. Student involvement depends on general expectations and beliefs (i.e., general expectations for success, levels of aspiration, internality, and incentives), and that understanding general expectations and beliefs adds significantly to the predictive power of the assessment variables (main hypothesis) for involvement.

2. Student involvement adds significantly to the power of aptitude for predicting high school course achievement.

METHODS

Sample. The sample consisted of 88 high school students in four sophomore social studies classes. The high school is situated in an economically depressed urban area on the south side of Chicago. The student population, approximately 2,700 is 100 percent black. The recent past of the school is replete with educational problems and a high drop out rate. To illustrate, the freshman class of 1973 totalled 852, but the comparable senior class graduated only 220 in 1977 (a 74 percent decrease). Thus, the students represent a particularly relevant sample for studying involvement with class activities, because the students are in a context where involvement is problematic.

The classes were differentiated by the level of ability of the students. Two of the classes were designated by the school as part of an advanced program. The students in this program read at or above grade level and had functioned successfully in the advanced program for one year. The other two classes were designated by the school as basic. These classes consisted of students who were below average in skills and past performance. The mean reading level of basic students was more than 3 years inferior to the level of advanced students.

Data Collection. Observation and student report data were collected in November and December, and interviews were conducted in January. On the first day of the study, the investigator addressed each class and discussed the purposes of the study--to understand the perceptions and feelings of high school students.

The study employed multiple techniques to measure a variety of antecedent variables, involvement indices, and an achievement score. The methods of data collection can be categorized by the five data types: 1) personal orientation scales, 2) cued responses from time samples of classroom experience, 3) systematic classroom observation, 4) school and class records, and 5) interviews with class members. Figure 2 represents an overview and time sequence for the data collection procedures.

Personal Orientation Scales. Three instruments were used to assess orientations of students. All were paper and pencil instruments administered following the investigator's explanation of the study to the class. A locus of control scale (Nowicki and Strickland, 1972--20 items suggested for grades 7-12) was used to measure internality. The social incentive of school activities was measured by 18 items, each representing an activity associated with high or low school involvement. Students responded to items, such as, "Always has assignments completed" and "Interrupts the classwork and gets disciplined by the teacher" by rating along a continuum, whether they would or would not want to be friends with a person who did that activity. A third instrument assessed levels of aspiration and general expectations for success.

Cued Responses from Time Samples of Classroom Experiences. Once during each of 6 class periods, at a time randomly selected by the observer, an alarm clock emitted a signal. This signal notified teacher and students to stop what they were doing and fill out a self-report form. On the form were questions about what the person was doing and what was going on in the class, and rating scales for assessments of skill, task difficulty, involvement, challenge, and others.

Classroom Observation. An observer was present during 10 class periods for each class group. The observer had two tasks: to record the activities of teacher and students, and to administer the self-report forms. During each class the observer first recorded a narrative account of the teacher's behavior and then coded the behaviors of each student. Recording one student at a time in a systematic order, the observer used a coding scheme modified from Anderson's (1978). The codes were: attention to the task, working alone on the task, working with others on the task, working with the teacher on the task, or behavior not relevant ot the task. Two observers achieved 95 percent agreement on coding decisions before data collection was begun.

School and Class Records. Reading scores from tests administered before admittance to high school were used as a measure of aptitude. Scores for 27 students in the basic class (63 percent) and 39 students in the advanced class (87 percent) were available. Days absent, assignments not completed, and test scores during November and December were obtained from the teacher's records. Also, teachers were asked to rate each student on involvement with the class, considering both the

amount of participation and the intensity or energy with which a student engaged activities.

Interviews. A male and female student from each class, one representing overall high involvement and the other low involvement, and two students whose self-reports were inconsistent with their classmates, were interviewed. A standard interview schedule was used for each student. Students were asked to describe classes that make them feel "good," "bored," and "angry," compare their most and least involving class; and define the concepts involvement and challenge.

RESULTS

Description of involvement. Several variables represent the frequency and intensity of student participation. Each of these variables indicates, but only partly assesses, student involvement. The means of involvement indices are displayed in Table I: Since the measures of involvement are distinct between the advanced and basic classes, their means are reported separately and T-tests of statistical significance have been undertaken. The indices "teacher ratings," "days absent," "percent observed off task," and "feeling involved" show advanced students more involved than basic students. Basic students, though, report feeling more challenged in the classroom. The picture in both groups is one of low frequencies of off task behavior, moderately strong feelings of involvement and completion of assignments, and only a moderate degree of wishing you were doing something else.

Table II presents intercorrelations among involvement indices. The correlations are consistently in the correct direction; for example, being observed off task is positively associated with reporting one's self off task and negatively associated with feeling involved. Although the direction of the relationships between the indices conforms to an expected "real" relationship among the phenomena, the magnitudes of the correlations are not high. Given the low to moderate correlations displayed in Table II, some associations are evident. "Teacher ratings," "days absent," and "assignments not completed" cluster; similarly the

self-reports and observations--measures specific to in-class-activity--are related. Thus, it appears that two underlying structures for the indices of involvement describe a general level of participation and a participation specific to in-class action. Principal axis factor analysis using varimax rotation was performed to test the two cluster structure, yielding three factors, which respectively account for 29%, 17%, and 14% of the variance. The highest loading variables on each factor are indicated in Table II. The factors and loadings support, albeit modestly, the belief in general and action specific factors.

Description of constructions and orientations. Table I displays means of construction and orientation variables. The students rate their skills greater than task difficulties, feel sure they know what the teacher wants them to do, and rate most class activities important for getting a good grade. The students expected a low B grade and hoped for a low A grade, and realized that it would take most of their effort (85%) to earn a good grade. The average student aspired to at least two years of college and a lofty income. The locus of control scores for the sample are equivalent to normative scores reported by Robinson and Shaver (note 1). The social incentive scale showed positive feefings about school activities. When asked to rate school and non-school activities by whether they would want to be friends with someone who did that activity: "takes books home to study for a test" was the highest rated item; the lowest rated item was "drops out of school."

As with the involvement indices, Table I shows constructions and orientations are significantly different between advanced and basic classes. Only "sureness," "expected effort," and "social incentive" are not different for the two groups. The basic students perceive a lower probability of success on class activities and attach a greater importance to these activities. The orientation variables show the basic students to be more external with lower expectations and aspirations than the advanced students. The lower reading level of the basic students corresponds with lower probability of success, expectations, and aspirations.

Relationship of involvement indices with constructions and orientations. A series of regression analyses were conducted to evaluate what proportion of variance in involvement could be accounted for by the construction and orientation variables, and to determine which predictor variables were most significant. Each of the involvement indices was taken as a criterion measure for a multiple regression on the construction and orientation variables. Stepwise regression procedures were employed; selecting at each step the variables explaining the largest amount of variance in the criterion measure. The procedures were stopped after four variables had been selected. The results of the predictor selections are given in Table III.

Teacher ratings, days absent, assignments not completed, feeling involved, and feeling challenged were the involvement indices best predicted by construction and orientation variables, and were best predicted

by combinations of construction and orientation measures. Because of the strong correlations among several of the predictor variables, the ordering of the predictors is less significant than the combinations and R^2 achieved by each regression. Assessed skillfulness and general expectations for getting a high grade are the strongest and most frequent predictors of the involvement indices. Both of these variables reflect a belief on the part of the student that he or she will be successful.

Relationship of achievement with involvement indices. Table IV displays results of regressing achievement on involvement, specifiying class grouping (advanced or basic) as a covariable. Achievement was measured by an examination prepared by the teacher on material covered during the investigation. Models I, II, III, and IV show significant predictive power: in each case the involvement variable accounts for a greater portion of the variance than does the aptitude measure. The three "general" involvement indices -- teacher ratings, days absent, and assignments not completed -- are the best predictors of achievement. This finding was replicated when achievement was regressed on reading level and involvement measures within the advanced class.(note 2)

Interviews. Ten students were individually interviewed about class characteristics which lead to involvement and the meanings of "involvement" and "challenge" in the classroom. Students described good or involving classes as having successes, being relevant or important, and not having too many obstacles. Some of the obstacles mentioned

were: Teachers who do not or cannot help you understand, repetition, lack of humor, disruptive students, and tasks which are too hard. The teacher's role is important: The abilities to control disruptive students, explain the subject, and keep tasks from becoming monotonous influence student involvement. Several students when contrasting their most and least involving classes declared that if the teachers were reversed then the involvement would be reversed.

One pattern of note is how highly involved students respond in the basic class. The two students agreed that boring classes are characterized by student conflict, that they become angry when students lack respect for the teacher and disrupt the class, and that most and least involving classes are distinguished by their personal successes. The scenario appears to be that highly involved students in the basic class value personal success and depend upon the teacher to keep other students from becoming obstacles to success.

Students defined involvement as participation, participation that was active and conformed with class requirements. Students contrasted active with passive, for example, "just listening is not involvement, you must be translating between what's going on and what you understand." Challenge meant difficulty, but for some students, problems are manageable, "you have to work to figure it out," while for others the difficulties are unmanageable, "if the work is too rough." When difficulties are manageable they lead to involvement, when they are indomitable they deter involvement.

Students' comments showed that challenges are only accepted, when some means for accomplishment is recognized. The means for accomplishment may be the students own skill, in other cases it may be the opportunity to work with peers. Still another possibility, is that faith in the competence or care of a teacher may enable the student to persist in the face of potent challenges.

Contribution of the cued responses. A random signal cued students to report their assessments and feelings. These reports extend the description of classroom activities beyond the limits of observational inference. For example, self report data revealed the advanced and basic classes were significantly different on assessments of skill, task difficulty, and importance of the activity. Students in the basic class believed themselves less skillful and their tasks more difficult and more important.

Common to both groups was an assessment of class activities which demand student constructed learning (i.e., discussions, group activities, and oral responses) as more difficult, less important, with students feeling less skillful and less sure about what to do; than during more teacher structured activities (i.e., note taking, watching a film, or listening to a lecture). These student assessments reflect the status awarded teacher and student roles in classrooms: the teacher has the important role, and students recognize the efficacy of having direct instruction from the teacher. Students believe that success is most probable when the teacher organizes, structures, and leads the activities.

The use of cued responses along with interview data provides another example of how the cued responses contribute to understanding involvement. An interview respondent, a highly involved female from the advanced class, recalled with graphic clarity an instructional game played in class. A similar recollection, although not as vivid, was made by the other interview respondent from that class. The extensive recall indicated a high level of involvement during the instructional game. The female stated, "It's fun when we play games instead of taking notes. It's good because you are working with your friends, so even when you have trouble understanding, together you can get it. (Teacher) makes you work hard at the game because the ones that do the best don't have to do the next assignment and get an automatic A." Within this brief description three characteristics of an involving class situation are illustrated: 1) something that is not routine nor monotonous, 2) probable success, and 3) a tangible and valued reward.

The self-reports taken during this instructional game help explain the role of assistance in bringing about probable success and involvement. For most tasks high skills and low difficulty were associated with high involvement. For the instructional game, however, skillfulness was rated significantly lower and difficulty significantly higher than the mean ratings for other activities, but the rating of involvement was not significantly different. The interview indicated that being able to work with friends mediated against being less skillful and having a more difficult task. Thus, in the class, working with peers enabled students to maintain high involvement when confronted with a formidable task.

DISCUSSION

The results of this investigation have implications for both the assessment and explanation of involvement. Involvement was assessed by multiple indicators of student participation. A factor analysis distinguished between indices of general involvement and indices specific to in-class actions; however, the lack of strong intercorrelation shows that each variable makes a unique contribution to the profile of involvement. The data do not provide compelling evidence for selecting a few of these variables as a parsimonious description of involvement.

The selection of involvement indices should be based on the characteristics of the sample and the intentions of the investigator. Previous studies of student involvement have typically assessed involvement only through systematic observation of student behavior, with a few studies also employing recall techniques to stimulate student reports. As with the present study the overt and covert assessments, at best, have only moderate correlation. The evidence suggests that the power of direct observation to capture important learning events diminishes as the length of the study (number and variety of learning events) and the age of the student increases. Older students manage their own learning and have diverse patterns of action: contrast the student who works hard all semester with the student who "pulls and all-nighter" before the exam. Also, Anderson (1978) in reviewing several studies points out that while correlations between observations of on-task behavior and achievement range between .40 and .65 for elementary and junior high students, the longer studies have lower correlations.

Although observation of on-task behavior may be an effective predictor of children's achievement in prescribed learning experiences, the results of the present investigation indicate that when longer units of learning and older students are investigated, achievement may be better predicted by attendance, completion of assignments, and teacher ratings. Further, it is recommended that multiple indices be employed when the research intends to create knowledge about involvements, rather than simply relate involvement to achievement: The use of multiple indices creates a comprehensive profile of involvement.

The model hypothesized in this study was demonstrated to hold in a natural class setting: student constructions and orientations predicted involvement; and teacher ratings, days absent, assignments not completed, and feeling involved were significantly related to achievement. These findings support a belief that the student's understanding of the class situation provides a base of action, helping to explain the intensity and frequency of classroom behavior. In general, those students who expected the most out of school, success was most probable, were the most involved. This finding held both in the aggregate, where there was a great range of abilities and expectations among the students, and within each grouping where basic abilities and expectations were homogeneous. Feeling skillful during class activities was the best predictor of teacher ratings of involvement, feeling involved, and completing assignments, while feeling that the class activities are difficult was the best predictor of feeling challenged and wishing you were doing something else.

The association between probable success (skills are high; difficulty is low) and involvement is similar to findings by Mayers (1978). Mayers studied middle class students in a suburban high school, and found a high degree of association among the relative enjoyment students report for classes, feeling skillful, and feeling active. While the present study replicates Mayers findings and extends the investigation to an urban economically deprived sample, it also suggests that probable success is not solely dependent on assessments of personal skillfulness. Fellow students and teachers can intercede between the student's level of skill and expected outcome.

Fellow students can facilitate involvement by making success more probable. The self reports and interviews support research findings (note 3) showing a positive impact of games that mix cooperative and competitive reward structures. However, just as peers can arouse involvement, they can also diminish involvement. When students are disruptive or show disrespect for the class or teacher, other students are turned off. Students depend on teachers to control disruptive students and command respect for the school and school work. Teachers also stimulate involvement when students view them as competent and caring.

The present study was conducted in a natural classroom situation. Natural settings offer the advantage of direct generalizability to other classrooms, but limit the control and measurement of variables. In most instances these limitations mask the relationships suggested in the findings, just as some students were not involved with the school

work, some were not involved with reporting their feelings and assessments. Indeed given the chaos often attributed to inner city high schools, it is perhaps surprising to find any regularity, but regularity exists, student involvement is real, and although not totally explicable through a rational model, the findings show a degree of regularity in student actions and support an argument for how these actions are conceived, formulated, and executed in the classroom.

NOTES

1. Robinson and Shaver (1973, pp. 206-211) report norms of grade 10 students--$\bar{x}$ = 13.1, sd = 5.3, for the 40 item test. The scores for the present sample--$\bar{x}$ = 6.9 and sd = 2.6--were achieved on the 22 item version of Nowicki-Strickland Test.

2. Since reading scores were obtained for only 63 percent of the basic students, the basic students were not included in the regression using reading scores.

3. See Slavin (1977) for a review of the literature on classroom reward structure.

Figure 1

A Conceptual Schema for Classroom Action

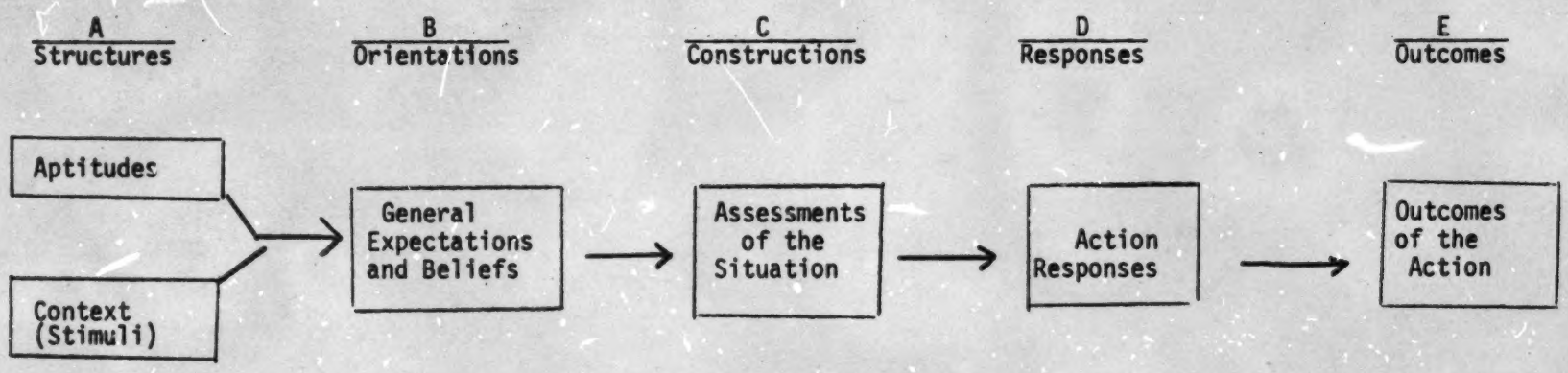

Figure 1A

Summary of Measureable Variables for the Schema

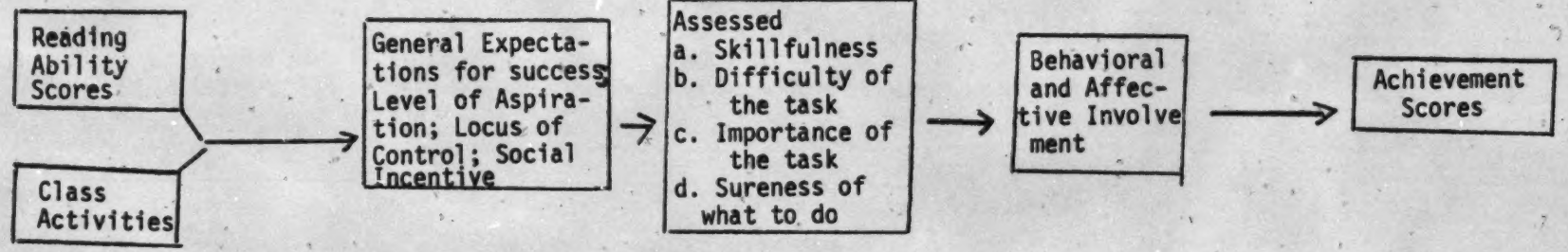
Reading Ability Scores
Class Activities
General Expectations for success; Level of Aspiration; Locus of Control; Social Incentive
Assessed
a. Skillfulness
b. Difficulty of the task
c. Importance of the task
d. Sureness of what to do
Behavioral and Affective Involvement
Achievement Scores

Figure 2

Overview and time sequence for data collection

A . B .	C	. D E
November	. December .	January

A. Practice observations to establish inter-observer agreement.

B. Explain research and techniques to students, and administer personal orientation questionnaires.

C. Ten days of observation per class concurrent with 6 days of signal - stop action-self report.

D. Examine school and class records and interview teacher.

E. Student interviews are conducted.

TABLE I

MEANS OF INVOLVEMENT INDICES AND ANTECEDENT VARIABLES

Variables (Potential Range)	Aggregate	Advanced n = 45	Basic [a] n = 43
Teacher Rating (0-100)	55	71	39**
Days Absent (0-30)	6.6	3.0	10.3**
Assign. Not Completed (0-10)	1.9	1.7	2.0
% Reports Off Task	11	11	11
% Observed off task	8	6	10*
Feeling Involved	82	85	79*
Feeling Challenged	43	38	49*
Wish/doing/else	43	42	43
Constructions			
Skill (0-10)	7.8	8.7	7.7*
Difficulty (0-10)	3.1	1.6	4.1**
Sureness (0-10)	9.0	9.1	9.0
Importance (1-4)	3.6	3.5	3.8*
Orientations			
Expected Grade (1-9)	6.2	6.9	5.3**
Expected Effort (0-10)	8.5	8.4	8.7
Level of School-Aspiration (1-5)	3.3	3.7	2.7**
Grade-Aspiration (1-9)	8.1	8.6	7.4**
Income-Aspiration (in thousands)	62.2	75.8	45.9*
Externality (0-22)	6.9	6.3	7.7**
Social Incentive (18-90)	56.2	56.2	56.2
Aptitude			
Reading Scores	7.6	8.9	5.6**

[a]An asterisk beside the mean of Basic Students indicates that the difference in the means between Advanced and Basic students is statistically significant.

* $p \leq .05$

** $p \leq .01$

TABLE II

INTERCORRELATIONS OF INVOLVEMENT INDICES

Factors[a] - Indices		Teacher Ratings	Days Absent	Assign. Not Completed	% Observed Off Task	% Reports Off Task	Feel Involved	Feel Challenged	Wish/doing/else
I	Teacher ratings								
	Days Absent	-.41*							
	Assign. Not Completed	-.35*	.38*						
II	% Observed off Task	-.24*	.18	.17					
	% Reports off Task	-.04	-.06	.13	.15				
	Feel involved	.34*	-.17	-.16	-.25*	-.34*			
III	Feel Challenged	-.27*	.20	.09	.04	,06	-.05		
	Wish/doing/else	-.15	-.04	.02	.14	.23*	-.21*	.28*	

a: I, II, and III are clusters of the highest loading variables on each factor

* = $p \leq .05$

TABLE III

Involvement Predicted From Assessment and Orientation Measures:

Increments to the squared multiple correlation for selected predictors [a]

Teacher Ratings

Step	Measure	R^2	Δ	Prob.
1	Skill	21	21	.001
2	Aspire/Gr	36	15	.012
3	Externality	43	7	.003
4	Expect/Gr	47	4	.020

Feel Involved

Step	Measure	R^2	Δ	Prob.
1	Skill	21	21	.004
2	Externality	29	8	.019
3	Social Incentive	34	5	.017
4	Sureness	38	4	.054

Days Absent

Step	Measure	R^2	Δ	Prob.
1	Expect/Gr	15	15	.037
2	Level/Sch	23	8	.008
3	Skill	29	6	.014
4	Importance	32	3	.090

Feel Challenged

Step	Measure	R^2	Δ	Prob.
1	Difficulty	31	31	.000
2	Level/Sch	37	6	.017
3	Skill	39	2	.137
4	Importance	40	1	.348

Assignments Not Completed

Step	Measure	R^2	Δ	Prob.
1	Skill	13	13	.009
2	Expect/Gr	18	5	.026
3	Social Incentive	22	4	.129
4	Level/Sch	23	1	.438

Reports Off Task

Step	Measure	R^2	Δ	Prob.
1	Sureness	18	18	.000
2	Aspire/Gr	20	2	.165
3	Expect/Gr	21	1	.286
4	Importance	22	1	.374

Observed Off Task

Step	Measure	R^2	Δ	Prob.
	Level/Sch	7	7	.053
	Sureness	11	4	.290
	Externality	12	1	.372
	Difficulty	13	1	.382

Wish You Were Doing Something Else

Step	Measure	R^2	Δ	Prob.
1	Difficulty	11	11	.010
2	Aspire/Gr	15	4	.148
3	Social Incentive	17	2	.142
4	Skill	19	2	.

a: Δ is size of increment to R^2, decimal points for correlations have been omitted

TABLE IV

Achievement Predicted from Involvement with class as a covariable:

Advanced and Basic Classes (n = 85)

	R^2	Prob.	Measure	Estimate	T for Hc	Prob.
			Class	.40	1.12	.263
Model I	.33	.000	Teacher Rating	1.59	5.19	.000
			Class	.506	1.34	.185
Model II	.22	.001	Absenteeism	-.592	-3.77	.000
			Class	.317	.86	.392
Model III	.28	.000	Assign. Not Compl.	-2.79	-4.51	.000
			Class	.499	1.22	.225
Model IV	.10	.047	Feel Involved	.187	2.10	.040
			Class	.580	1.38	.170
Model V	.04	.285	Observed Off Task	-12.85	-.80	.428
			Class	.557	1.31	.194
Model VI	.03	.362	Reports Off Task	-2.93	-.38	.696
			Class	.554	1.32	.189
Model VII	.05	.224	Challenge	-.051	-1.06	.293
			Class	.565	1.34	.185
Model VIII	.03	.367	Something Else	.018	.36	.721

REFERENCES

Anderson, L. The Relationship Among Teaching Methods, Student Characteristics, and Student Involvement in Learning. Journal of Teacher Education, 1978, Volume 29, #3, pages 52-57.

Bloom, B. S. "Learning for Mastery," Evaluation Comment, 1968, 1, (2).

Bloom, B. Human Characteristics and School Learning. New York: McGraw-Hill, 1976.

Brophy, J. E. Achievement Correlates. In Herbert Walbert (Ed.), Evaluating Educational Performance. Berkeley-McCutchan 1974.

Carroll, J. B. "A Model of School Learning," Teachers College Record, 1963, 64, 723-733.

Csikszentmihalyi, M. Beyond Boredom and Anxiety. San Francisco: Jossey-Bass, 1975.

Dember, W. Response by the Rat to Environmental Change. Journal of Comparative Physiological Psychology, 1956, 49, 93-95.

Dember, W. The New Look in Motivation. American Scientist, 1965, 53, pages 409-427.

Dember, W., Earl, R., and Paradise, N. Responses by Rats to Differential Stimulus Complexity. Journal of Comparative Physiological Psychology, 1957, 50, 514-518.

Kammann, R. Cognitive Complexity and Preferences in Poetry. Unpublished Doctoral Dissertation, University of Cincinnati, 1964.

Marliave, R. Academic Learning Time and Achievement: The Validation of a Measure of Ongoing Student Engagement and Task Difficulty, Far West Laboratory for Education, R and D, San Francisco, California, 1978.

Mayers, P. Flow in Adolescence and Its Relations to School Experience, Unpublished Doctoral Dissertation, University of Chicago, 1978.

Mayers, P., Csikszentmihalyi, M., and Larson, R. The Daily Experience of High School Students. Paper presented at the annual meeting of the American Educational Research Association, Toronto, March, 1978.

Nowicki, S. and Strickland, B. A Locus of Control Scale for Children. Journal of Consulting and Clinical Psychology, 1973, 40, 148-154.

Robinson, J. P. and Shaver, P. R. Measures of Social Psychological Attitudes, Ann Arbor, Michigan: Survey Research Center, Institute for Social Research, 1973.

Rosenshine, B. Teaching Behaviors and Student Achievement. London: National Foundation for Educational Research, 1971.

Rosenshine, B. Classroom Instruction. In N. L. Gage (Ed.), The Psychology of Teaching Methods. Chicago: University of Chicago Press, 1976.

Slavin, R. E. Classroom Reward Structure. Review of Educational Research, 1977, 47, 633-650.